

$$c^2 = a^2 + b^2$$

C IS ALWAYS THE LONGEST  
IS OPPOSITE TO  $90^\circ$

$$c = \sqrt{a^2 + b^2}$$

$$a = \sqrt{c^2 - b^2}$$

$$b = \sqrt{c^2 - a^2}$$

CH. 5.2 p. 281

$$x^2 = 16$$

$$\sqrt{x^2} = \sqrt{16}$$

$$x_{1,2} = \pm 4$$

$$x_1 = -4$$

$$(-4)(-4) = 16$$

$$x_2 = 4$$

$$4 \cdot 4 = 16$$

## PROPERTIES OF SQUARE ROOTS

$$\sqrt{a \cdot b} = \sqrt{a} \cdot \sqrt{b}$$

$$\sqrt{\frac{a}{b}} = \frac{\sqrt{a}}{\sqrt{b}}$$

✓ square root

✓ RADICAL

$$\begin{aligned}\sqrt{32} &= \sqrt{16 \cdot 2} = \\ &= \sqrt{16} \sqrt{2} = 4\sqrt{2}\end{aligned}$$

$$\sqrt{\frac{121}{16}} = \frac{\sqrt{121}}{\sqrt{16}} = \frac{11}{4}$$

$$\text{EX. 1} \quad \begin{array}{r} 7x^2 - 23 = 103 \\ +23 \quad +23 \end{array}$$

$$\begin{array}{r} 7x^2 = 126 \\ \hline 7 \quad \quad 7 \end{array}$$

$$x^2 = 18$$

$$x = \pm \sqrt{18}$$

$$\approx \pm 4.24$$

$$\begin{aligned} x &= \sqrt{18} = \sqrt{2 \cdot 9} = \\ &= 3\sqrt{2} \end{aligned}$$

Ex. 2  $\underbrace{64(x+5)^2}_{y_1} = \underbrace{289}_{y_2}$

① ZOOM 6

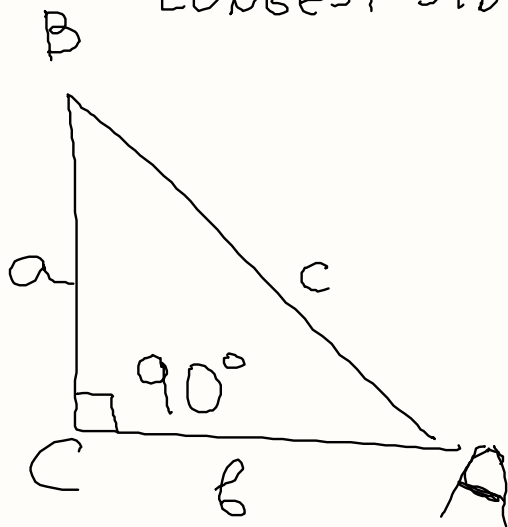
②  $y_1 = 64(x+5)^2$   
 $y_2 = 289$

③  $y_{\min} = -10$   $y_{\max} = 350$   
 $x_{\min} = -10$   $x_{\max} = 10$

$$c^2 = a^2 + b^2$$

PYTHAGOREAN, PYTHAGORAS

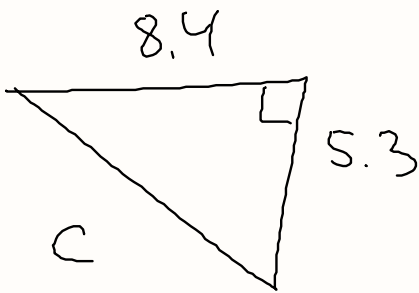
↑ LONGEST SIDE → SIDE OPPOSITE TO  $90^\circ$  ANGLE



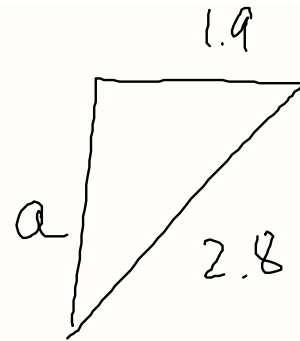
$$c = \sqrt{a^2 + b^2}$$

$$a = \sqrt{c^2 - b^2}$$

$$b = \sqrt{c^2 - a^2}$$



$$c = \sqrt{8.4^2 + 5.3^2} \approx 9.9$$



$$a = \sqrt{2.8^2 - 1.9^2} \approx 2$$

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#27 p.287 STANDARD WIN ZOOM6  $y_{\max}=20$

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HOME p.287 #28 #30, #32, #34

↓  
 $y_{\max}=55$